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ABSTRACT

Preschool children need direct involvement with science content hands-on experiences that involve them in gathering, organizing, analyzing, and evaluating. This paper describes how to create a science area in a preschool classroom. The paper delineates the equipment needed to maintain a mentally stimulating environment for young children. It also discusses the importance of hands-on science activities, lists themes appropriate for young children, and discusses the teacher's role as a facilitator of knowledge development. Five science activities are described: (1) observing that magnets attract some objects and not others; (2) using paper, petroleum jelly, and a magnifying glass to observe air pollution; (3) using peanuts to practice observing, measuring, classifying, and predicting; (4) using celery and food coloring to view the transport of liquid throughout a plant; and (5) identifying objects through the sense of smell. Contains 13 references. (Author/KB)

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Creating A Science Area In A Preschool Classroom

By

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This article contains information on how to create a science area in a preschool classroom. It reviews the equipment needed in this area to maintain a mentally stimulating environment for young children. The importance of hands-on science activities, themes appropriate for young children, and the role of the teacher as a facilitator of knowledge is also discussed. Included are five science activities that will help keep your science area alive and busy. The results of a survey taken of fifty preschool teachers is also included in this paper. Main question in survey: Do you have a science area in your classroom, and is it utilized by the children?

Thinking About Your Science Area ?

Do you have a science area in your classroom? If so, is it up to date with the equipment needed to help children in their discoveries? Do you see your children exploring in this area? Do you have a variety of materials available for the children on hand? Do you change your science area through out the year, or is it gathering dust in a corner somewhere in your room? If you answered "NO" to any of the above questions, then you need to take a serious look at your science area and begin to think about ways to provide more opportunities for your children to explore. The discussion that follows is to help you create a science area for your room, have equipment that promotes learning, have year round objects that keep children coming back and ideas for year round fun.

The preschool child needs direct involvement with science content. They need hands-on experiences that involves them in gathering, organizing, analyzing, and evaluating science content. No longer is the student to be merely a sponge "soaking up" the information given. The sciencing approach demands the active participation of the student, with the teacher serving as guide and resource person (Feng, 1987, p. 9). Teachers in early childhood who wishes to encourage active exploration must provide a variety of materials for the young learner. These need not, however, be either expensive or specialized (McNairy, 1983, p. 390). In your science area however, you can equip this area with hands on activities and objects the children can use throughout the year. As the teacher your role will be to facilitate rather than direct children's exploration by doing the following: supporting open-ended inquiry, supplying instruments of play, seizing the moment, offering a place of discovery, sharing respect for life, seeking community involvement and celebrating wonder (Ross, 1997, p.35).

The primary goal of the science program, is to create a sense of discovery, exploration and inquiry in the child as he or she is exposed to the natural phenomena of their daily living. Science is something everyone can understand. Openness to discovery is what matters in scientific thinking; the

techniques and tools of science are vehicles that facilitate the process of discovery and can be learned along the way. As caregivers and teachers, when you nurture children's natural desire to investigate, you are helping them develop scientific minds (Jablon, 1992, p.189). Science activities are good for shared learning because of the interest science evokes in children (Hardison, 1995, p.91). Learning in a preschool is busy, constant and interactive. Everyday is an adventure, a new twist of the kaleidoscope (Hardison, 1995, p. 93). Today's children can function in a complex society of rapid scientific and technological changes.

Appropriate Science

Science is everywhere. Appropriate early childhood themes include life and the environment, water and air, energy and changes, the human body and senses; buoyancy, pill bugs and insects. Technology for children is often thought of as computers, video games, and tape players, but technology in the early childhood classroom should be broadly defined as any tool that extends the senses, such as hand lenses, magnifying bug boxes, string telephones, thermometers and compasses (Patton & Kokoski, 1996, p.40).

Young children are very curious about the world around them and they love to see how things work. They bring to school huge amount of

information about things they know, see and experience. Teachers need to make sure all children have access to science. Developmentally appropriate early childhood classrooms provide young children with opportunities to identify problems and questions in their environment that can be explored. Teachers and children work collaboratively to plan and implement investigations, and to seek answers and solutions that are appropriate for their level of development and understanding (Rakow & Bell, 1998, p.167).

Organizing Your Science Area.

Where would be a great place to put your science area, and what equipment is needed for an active environment? According to Haper and Spiegle (1991, p.8) the science area should be located in a sunny area of the classroom, with a low table, a shelf of materials to be displayed and invite interaction from the children. Here is a list of equipment for an active science area: magnets, magnifying glasses, balance scale, planting supplies, collections (sea shells, seeds, rocks) (Harper & Spiegle, 1991, p. 5). To compliment this list, here are a few more items that I know would be a value to any science area: bug viewer, beginners microscope, prism, a feely box, drawing paper, pencils, and crayons (for drawing observations), classroom pet, square pieces of fabrics, stethoscope, pine cones, and acorns.

These objects and equipment can be home made or collected by the children. With these things on hand, the children can explore in this area during elective activity time.

Simple Science Activities That Can Be Kept On

The Science Table For Observation Or Exploring

For young children, the world is their laboratory. They need to manipulate, observe, and report on things to understand what is new and different to them. Using only materials already on hand in the day care center and classroom, the teacher can start children towards a life long interest in scientific discovery (Jones & Shafer, 1987, p.32). The following activities are easy and fun for young children. Some I have tried and found that the children have enjoyed them and kept their attention. Try these separately or incorporate them into your lessons.

1. **The Magnet Test:** To observe that magnets attract certain kinds of objects.

Materials: Two margarine containers, marking pens, small objects that are magnetic or non-magnetic, magnets, tray,

. on one container draw a happy face and mark yes.

. on the other draw a sad face and make no.

Place the small objects and the magnet on the tray. The child tries to pick up each object with the magnet. Then puts the objects that will attract in the yes dish and the objects

that will not attract in the no dish. The child makes observations about the objects that the magnet did attract (Aaron & Koelach, 1984, p.55).

2. **Stuck On You** This activity takes about 10 minutes daily for two weeks. The class will observe air pollution. Each student will need a clean sheet of paper, a dab of petroleum jelly, and a magnifying glass. The teacher will need chart paper and a magic marker.

. Ask the class to go to the window and look at the air. Ask them if they can see the air or anything in it. Ask each child to take a clean sheet of paper and put a dab of jelly on it, about a teaspoon, and smear it. Observe the paper for the next week. Then ask the following questions: What did your paper look like on the first day? . Why do you think the paper is different today? If you left the paper on the windowsill for another week, would it look different? (Jones & Shafer, 1989, p. 18).

3. **Please Pass The Peanuts:** The children will practice the process skills of observing, measuring, classifying, and predicting. Materials: napkin or paper towel, two peanuts (unshelled), a hand lens, and ruler. Ask the children to use their senses of touch, and smell to observe the outside of their peanuts and record their responses. Ask the children to classify the peanuts, by color, cracked or not etc. Ask them to measure the peanut with their rulers. Who has the shortest or longest. Use a chart to visualize their data. Ask them to predict what's inside the shell. Finally, the children may use their sense of taste. Make sure no one is allergic to peanuts (Wright, 1996, p.29).

4. **I'm Thirsty!** This lab will give students a chance to view the tubes that transport liquid throughout a plant. Materials: celery, masking tape, plastic glass, water, red or

blue food coloring, plastic knife, plastic bag and pencils or crayons. Explain to students that they will be using the celery stalk to find out how a plant drinks. Have children fill their glasses with water and add a drop of food coloring to the water and place their stalks in the glass. Observe the celery again in two hours. What are the changes? Have students describe what they see. Ask what made the tubes colored. Ask how the water gets into the leaves. Have the students draw a before and after picture of the celery stalk (Perdue, 1989 p. 18).

5. **We Smell With Our Noses:** How can we identify objects by smell?

Materials: Several materials that have distinct odors: banana, apple, onion, lemon, cheese, soap, peppermint candy, pencil shavings, orange, coffee, cocoa, and peanut butter. You will also need, aluminum foil, pictures of objects, and toothpicks.

Place one of the materials on a small piece of aluminum foil, wrap loosely, make smell holes in the foil with toothpick and place in a pill bottle. Repeat for each object. Cover bottles and let stand over night. As the children discover the bottles encourage them to smell each one and place it on the corresponding picture. This activity will help the children become more aware of their sense of smell (Althouse & Main, 1975, p. 30).

Conclusion

The science area should be one of the children's favorite area to go to in their classroom and explore on their own. The materials should be kept fresh and the equipment up to date. I hope that by reading this article, you are now confident to create your own science area if you don't have one or

use the activities to enhance the area you do have. Just a reminder, the skills that can be developed through scientific investigation and the processes associated with inquiry experiences will foster curiosity about daily life, enthusiasm for asking questions and seeking answers, and comfort in working collaboratively with other young scientists (Rakow & Bill, 1998, p. 167).

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